ABSTRACT

A fuel cell is provided that includes a polymer electrolyte membrane having a cathode and a gas diffusion layer arranged in this order on one surface, and an anode and another gas diffusion layer arranged in this order on its other surface. Recently, various methods of retaining moisture produced near the cathode have been adopted to ensure proper humidification and ion conductivity within the membrane. However, under certain operating conditions, conventional fuel cells allow excessive amounts of moisture to evaporate and escape into the oxidizing gas, causing the membrane to dry up. This fuel cell was designed to solve such problems by including a first and second layer within the cathode-side gas diffusion layer. The first layer is in contact with the cathode, and the second layer, which is thicker than the first layer, is the layer along which oxidizing gas is distributed and through which oxidizing gas is passed.